



How plants weather the cold

A team of researchers has used data on nearly 30,000 species, shared by hundreds of institutions through GBIF, to cast new light on how plants colonized colder regions.

The [study published in Nature journal](#) assembled the largest evolutionary “[timetree](#)” to show the order in which flowering plants evolved strategies such as the shedding of leaves to move into areas with cold winters.

The international research team used more than 47 million occurrence records accessed via GBIF to determine the distributions of over 27,000 plant species. From these records, they were able to extract minimum temperatures from the [Worldclim](#) climate database, to flag which species are exposed to freezing across their ranges.



Sunrise through a deciduous oak-hickory forest canopy at the Tyson Research Center at Washington University in St. Louis, Eureka, MO, USA. By Jonathan Myers.

“Without GBIF the study absolutely would not have been possible as we had no other way to access distributions for so many species. These locations allowed us then to determine whether species were exposed to freezing,” said Amy Zanne, the study’s lead author and an assistant professor of biology at George Washington University’s Columbian College of Arts and Sciences.

Among the co-authors of the paper was Nathan Swenson of Michigan State University, who was the 2012 winner of the GBIF Ebbe Nielsen Prize.



[Read more...](#)

NEW DATA 2

United States

Japan

Portugal

The Netherlands

AROUND THE NETWORK 3

Large-scale digitization projects in the Netherlands and Sweden

New national portal

Colombian journal publishes data papers

ID sheets on Irish invasive species available

TRAINING 4

GBIF Spain shares e-learning and data quality expertise

GBIF Spain and Ireland announce 2014 training plans

EVENTS 5

NEW DATA

United States

The [Cheadle Center for Biodiversity and Ecological Restoration](#), a new publisher, has made available 24,500 records of amphibians, birds and mammals from its collections.

The Center's valuable [collection of amphibians](#) from San Luis Obispo, Kern, Santa Barbara, Ventura and Los Angeles counties in southwestern California, forms part of the documentation of patterns of declining amphibians and changes in their distribution in the area. A large number of the specimens are fluid-preserved and accompanied by field notes.

The [ornithological collection](#) has a good representation of species found in southern California, and large series of a number of species that have figured prominently in scientific literature, such as the White-crowned Sparrow, Brown-headed Cowbird, grebes, Acorn Woodpecker, Wrenit, Savannah Sparrow and Spotted Towhee. The bird collection contains about 8,000 skins and skeletons, of which 400 are allocated for teaching.

The [collection of mammals](#) also has a regional focus, with specimens from the Point Conception region in Santa Barbara county and the Transverse Ranges, a group of mountains in southern California.

Another new publisher – the [Museum of Biological Diversity at the Ohio State University](#) – has made available over 20,000 records of fauna from its collections and from the Stuart M. Fullerton collection at the University of Central Florida (UFC).

[Over half the records](#) come from the 'Bug Closet', UFC's insect collection, founded by Stuart Fullerton, an entomologist who is passionate about parasitic wasps and the insect fauna of Central Florida, and continues to work with the collection. Most of the records published to GBIF are of the insect fauna of Florida.

The remaining records are of [amphibians](#), [reptiles](#) and [mammals](#) from the [division of tetrapods](#) at the Museum of Biological Diversity, Ohio State University. The division is an important repository of species from Ohio and North America, and its collections were established shortly after the founding of the University in 1870. The records published to GBIF include those of the native fauna of Ohio such as coyote (*Canis latrans* Say) and eastern chipmunk (*Tamias striatus*).

Japan

The [National Museum of Nature and Science](#), which hosts the [national node](#), has published [30,900 records of ringed worms or annelids](#) from its collection. Among the records are those of the deep-sea worm *Sigalion lituus*, which was discovered from around Japan's southwestern Ryukyu or Nansei islands.

Portugal

The [Museu de História Natural - Universidade do Porto](#) published its first dataset – the marine molluscs of Augusto Nobre – to the GBIF network.



Murex brandaris Lim. Photo by P. Ribeiro

The [880 records](#) published are of specimens collected along the Portuguese coast between 1887 and 1939 by Augusto Nobre, former director of the museum. These specimens are part of a larger collection which served as the basis for the 1940 edition of the 'Marine Molluscs of Portugal'.

The Netherlands

A list of species relevant to the management of Dutch inland water bodies is the first checklist to be published from the country to the GBIF portal. The "[Taxa Watermanagement the Netherlands](#)" list includes over 16,000 species and is regularly updated by specialists at the Rijkswaterstaat, the body responsible for public works and water management in the country.



The Netherlands also published [2,200 records of earthworms](#) in the country recently. Annual soil samples from 390 different locations taken between 1997 and 2011 were analyzed for earthworms, and help provide density data. The dataset was published by the [National Institute for Public Health and the Environment](#).

AROUND THE NETWORK

Large-scale digitization projects in the Netherlands and Sweden

Dutch project reaches halfway mark

[Naturalis](#), the national museum of natural history located in Leiden, Netherlands, has reached the halfway milestone in a five-year project to digitize seven million objects from its collections.

Some of the data recorded as part of the project are [available through GBIF](#) and many more will be accessible in the future.

3.5 million objects have been digitized so far with the help of specialized digitization teams, each targeting one of nine categories – wood samples, geology and paleontology collections, herbarium sheets, mollusc collections, dry mounted invertebrates, samples stored in solution, microscopic slides, 2-D material such as drawings and photographs, and entomology collections.

Each of the objects is tagged with a barcode, its metadata recorded and a high-resolution image of the object and label taken. A crowd sourcing application has been developed for volunteers to help transcribe specimen labels on the microscopic slide collection.

Naturalis has a collection of 37 million objects, and the remaining 30 million will be registered at the container level, to provide an overview of the drawers and boxes in which these are stored.

A portal with the digitized collection is expected to be launched in 2014.

[Read more...](#)

Digitization of Sweden's natural history collections planned

Sweden's natural history institutions are planning an ambitious programme to digitize all of the country's collections. The proposal was discussed at a symposium at the [Swedish Museum of Natural History](#) on 9 January, organized by GBIF Sweden and [Digisam](#), the Secretariat for National Coordination of Digitization, Digital Preservation and Digital Access to Cultural Heritage.

At the symposium, 14 presentations by invited speakers covered the challenges and benefits of a national digitization effort. Olaf Bánki, from the GBIF Secretariat, was among the presenters on the day.

Sweden's natural history collections run to an estimated 33 million specimens, of which only a small portion are available as digital data. In his talk, Frederik Ronquist from the Swedish Museum of Natural History attributed this to "a lack of funding in combination with the high cost of digitization using traditional methods."

"New mass digitization techniques adopted in recent years by the museum community abroad has opened up new possibilities," he added.

The national digitization effort will involve setting up of infrastructure to digitize all Swedish collections, starting with the one million objects at the Gothenburg herbarium.

[Read summaries of the presentations...](#)

New national portal

The Netherlands Biodiversity Information Facility has launched a [new portal in Dutch](#) to deliver news, events, an overview of biodiversity datasets published from the Netherlands to the GBIF network, a list of organizations and institutions in the country that manage biodiversity data, tools, and other information on publishing data online.

The website will also be available in English in the future.

Colombian journal publishes data papers

Biota Colombiana, published by the [Humboldt Institute](#), which hosts the GBIF node in Colombia, is the first Latin American journal to publish biodiversity data papers.

The journal includes six data papers (see list below) and guidelines for new authors. Data referred to in the papers are available via GBIF.

Data papers are produced when metadata (data about data) are compiled using the [GBIF Integrated Publishing Toolkit](#) (IPT) generating a manuscript that then goes through the usual critical review process before being accepted for publication.

The publication of the papers in Spanish is a result of support provided by the GBIF Secretariat to [three projects](#) encouraging researchers to author data papers, helping to provide recognition and incentives for those who make their data accessible to science.

[Download the journal...](#)

List of published papers

[Species Anacroneuria \(Insecta: Plecoptera: Perlidae\) of Colombia, deposited in the Museum of Entomology at the University of Valle](#) (Cali, Colombia)

Authors: María del Carmen Zúñiga, Bill P. Stark, Carmen Elisa Posso

Publishing institutions: Universidad del Valle and Mississippi College

[Ants on orange crops \(Citrus sinensis L. Osbeck\) of the Caribbean Coast of Colombia](#)

Authors: Juan Carlos Abadía Lozano, Ángela María Arcila Cardona and Patricia Chacón de Ulloa

Publishing institutions: Universidad del Valle and CORPOICA

[List of spiders of Colombia \(Arachnida: Araneae\)](#)

Authors: Javier C. Barriga and Ana G. Moreno

Publishing institutions: Instituto Humboldt and Universidad Complutense de Madrid

[Avifauna in the Andean forest disturbed in Farallones National Park, Cali, village of Pance, Valle del Cauca area](#)

Authors: Julio César Bermúdez-Vera, Sebastián Duque López, Manuel A. Sanchez Martínez and Elkin Tenorio

Publishing institutions: Universidad del Valle and Fundación Calima

[The Neotropical Waterbird Census in Colombia \(CNAA\): 2002 - 2011](#)

Authors: Jeisson Zamudio and Yanira Cifuentes-Sarmiento

Publishing institution: Red Nacional de Observadores de Aves RNOA and Asociación Calidris

[Bats \(Chiroptera\) of “El Vínculo” Regional Natural Park and its buffer zone \(Buga, Valle del Cauca, Colombia\)](#)

Authors: Daniela Arenas and Alan Giraldo

Publishing institution: Universidad del Valle

ID sheets on Irish invasive species available

The [National Biodiversity Data Centre](#), the GBIF node in Ireland, has produced a series of information sheets on invasive alien species to help in their detection and reporting, as part of its work on developing an early warning system for species invasions.

[Download ID sheets...](#)

The Data Centre has also embarked on an Invasive Species Risk Assessment in partnership with Inland Fisheries Ireland, the state agency responsible for the management of the country's inland fisheries resources. The assessment will help provide the necessary evidence base and publicity campaign to support the implementation of regulations to ban the trade in some of Ireland's high-risk species.

TRAINING

GBIF Spain shares e-learning and data quality expertise

Participants from French, Portuguese and Spanish GBIF Nodes met in Madrid as part of a mentoring project in which the three nodes will exchange expertise in different areas, for mutual benefit.

The capacity exchange event, held from 21 to 23 January, stems from one of the three projects to receive funding under the 2013 GBIF Mentoring Programme. At the event, GBIF Spain demonstrated the use of its e-learning platforms and building e-courses. The node offered its current platform – ATutor – to be used and adapted by the other nodes. Tools and procedures put in place by GBIF Spain for publishing national biodiversity data were also presented and discussed.

[Access materials from the event...](#)

The next mentoring event of this project will be held from 28-30 April in Lisbon, Portugal, and will focus on the GBIF IPT and biodiversity data papers.

GBIF Spain and Ireland announce 2014 training plans

GBIF nodes in Spain and Ireland have released details of their training workshop programme for 2014. GBIF Spain's plan for this year includes ten workshops on diverse topics such as integrating biodiversity databases in GenBank, cybertaxonomy, publishing species information based on the Plinian Core standard, and on persistent identifiers for biodiversity data.

[Access the plan...](#)

Ireland's National Biodiversity Data Centre will be organizing 22 workshops aimed at improving identification and field skills of citizen scientists and professionals involved in field recording. This year's programme will also include a module of advanced training targeted at the professional ecologist to meet the needs of Continuous Professional Development programmes.

[Full details...](#)

EVENTS

pro-iBiosphere workshops
10-13 February 2014, Berlin, Germany

[More information...](#)

[Report of the October workshop...](#)

EMODnet Biology Species Traits Vocabulary Workshop
12-13 February 2014, Paris, France

[More information...](#)

V eLearning workshop on data quality in biodiversity databases

Organized by GBIF Spain

19 February – 5 March 2014, online

[More information...](#)

Research Data Alliance 3rd plenary meeting

26-28 March 2014, Dublin, Ireland

[More information...](#)

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GBIF Secretariat
Universitetsparken 15
DK-2100 Copenhagen Ø
Denmark

<http://www.gbif.org/>

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Tel: +45 35 32 14 70
Fax: +45 35 32 14 80
E-mail: info@gbif.org

GBits archive: <http://www.gbif.org/newsroom/newsletter>